



PATENT--NO FEE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:  
Michael L. Schweiss

Group Art Unit  
3634

Serial No: 09/783,960

Filed: February 20, 2001

ExR: B. M. Johnson

Title: METHOD AND APPARATUS OF  
OPENING AND CLOSING A  
BI-FOLD DOOR

Case Docket No.: S339.12.2

#15  
U.B.  
3/27/03

SECOND DECLARATION OF MICHAEL L. SCHWEISS

I, Michael L. Schweiss, hereby declare as follows:

1. I am the inventor of the bi-fold door lift apparatus disclosed and claimed in U.S. Patent 6,199,617 and the method and apparatus of opening and closing a bi-fold door disclosed and claimed in U.S. Patent Application Serial No. 09/783,960.

2. I am the president of Schweiss Distributing, Inc. of Fairfax, Minnesota and am knowledgeable of the bi-fold doors made and sold by Schweiss Distributing, Inc. including the number of sales and dollar volume of sales of bi-fold doors.

3. Schweiss Distribution, Inc. manufactures and sells Schweiss Lift Strap® bi-fold doors that include door lift apparatus disclosed and claimed in U.S. Patent 6,199,617 and the method and apparatus of opening and closing a bi-fold door disclosed and claimed in U.S. Patent Application Serial No. 09/783,960.

4. The Schweiss method of opening and closing a bi-fold door having first and second panels hinged together moves the panels from aligned closed positions to folded open positions. The rate of movement of the panels from aligned closed positions

to folded open positions constantly increases until the panels are folded and the door is open. During closing of the panels from the folded open positions to the aligned closed positions, the rate of movement of the panels constantly decreases until the panels are aligned and the door is closed. The change in the speed of opening and closing of the bi-fold door is an advantageous environmental and safety feature of the Schweiss bi-fold door. The rapid opening and closing of the bi-fold door reduces the air flow out of a building thereby decreasing loss of heat energy. The decrease in the speed of closing of the bi-fold door allows objects and persons clear the bi-fold door as it moves to the closed position. The method of opening and closing a bi-fold door is achieved with door lift devices having rotatable members and elongated flexible webs connecting the bi-fold door to the rotatable member. The alignment of the web is maintained to ensure an overlapping relationship of the web around the rotatable member during opening and closing of the bi-fold door. The web wraps around the rotatable member as the door opens, increasing the circumference of the wrapped web thereby increasing the speed at which the door opens.

5. The apparatus includes elongated flexible webs connected to a panel of a door and a rotatable member. A reversible electric motor operating at a constant speed rotates the rotatable member to wind the web in overlapping relation to move the door to an open position. The speed of the door increased during opening movement of the door. When the drive of the motor is reversed, the web unwinds from the rotatable member during closing movement of the door. The speed of the door decreases during closing movement of the door. The web is maintained in alignment with a rotatable cylindrical member with annular plates located adjacent opposite ends of the cylindrical member and

a cylindrical shield located around the cylindrical member and annular plates. The shield has a closed end slot aligned with the cylindrical member. The web extends through the slot and between the plates whereby the plates and shield maintain the alignment of the web with the cylindrical member.

6. Attached Exhibit C is a product brochure of Schweiss Distributing, Inc. showing and describing the Schweiss Lift Strap® apparatus and method of opening and closing a bi-fold door. This apparatus and method is disclosed and claimed in U.S. Patent Application Serial No. 09/783,960. The brochure describes the structure, operation, and advantages of the Lift Strap® (web) system which is the subject of the patent application.

7. In the last four years, Schweiss Distributing, Inc. has manufactured and sold 1869 bi-fold doors having the Schweiss Lift Strap® devices and method that are the subject matter claimed in U.S. Patent Application Serial No. 09/783,960. The dollar volume of these sales is \$11,687,421. These sales could not have been achieved without the Lift Strap® devices disclosed in this patent application.

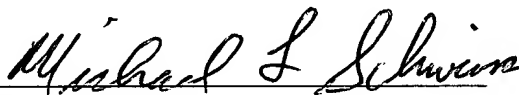
8. The Schweiss Lift Strap® bi-fold door opening and closing devices has satisfied a long-felt need for improving the open and closing of bi-fold doors. Customer satisfaction statements in Exhibit C are examples of the need and advantages of the Lift Strap® door lift device.

9. The commercial success of the Schweiss Lift Strap® bi-fold door opening and closing device disclosed and claimed in patent application 09/783,960 has been [a] achieved. This success is based on the new and novel web apparatus and method of opening the door at an increasing rate of speed and closing the bi-fold door at a decreasing rate of speed.

10. The need for the Lift Strap® door lift device and its commercial success are directly connected to the new and novel method and apparatus for opening and closing a bi-fold door described and claimed in U.S. Patent Application 09/783,960.

11. These statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001, and that such willful false statements may jeopardize the validity of the application or any resulting registration, and further that the facts set forth in this declaration are true, all statements made based on my own knowledge are true, and all statements made on information and belief are believed to be true.

Date: 2-5-03, 2003

  
Michael L. Schweiss